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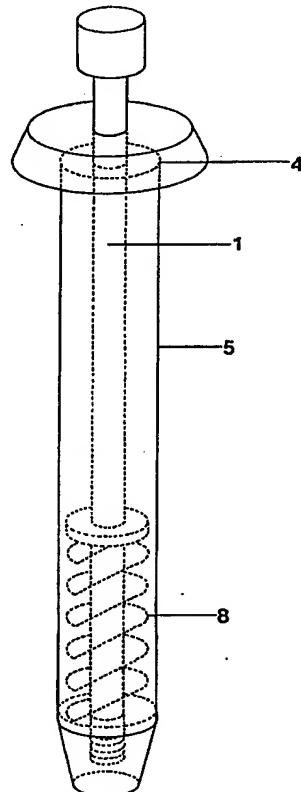
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(54) Title: A TOOL FOR THE MANUAL CLEANING OF WATER-CLOSETS, WITH INTERCHANGEABLE PADS

(57) Abstract

The tool for the manual cleaning of water-closets consists of: a supporting rod (1); a plurality of interchangeable pads, inserted with pressure and/or depression and/or with a mechanical system, with a spring or with a hook, into said rod in such a way as to be removed, with hooking means, at the end of use, for being led into the WC discharge; a pad-carrying support, having the function of support for said rod; a means for supporting said rod, eventually different from said pad-carrying support.



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"A TOOL FOR THE MANUAL CLEANING OF WATER-CLOSETS,
WITH INTERCHANGEABLE PADS"

The present invention concerns a tool for the manual cleaning of water-closets, usually called swab, provided with interchangeable pads.

It is well known that also in the most expensive and sophisticated bathrooms, the swab used for cleaning the surface of the water-closet after each use has remained always the same, corresponding to a means for the mechanical removing of the fecal residue, a part of which always sticks to the bristles of the swab.

This proves the lack of hygiene and the inadequacy of the existing tools.

It is the aim of the present invention to replace the conventional swab with a tool of new conception: easy, functional a completely hygienic.

The aim set forth is reached by means of the tool according to the present invention, consisting of:
- a supporting rod;

- a plurality of interchangeable pads, inserted with pressure and/or depression and/or with a mechanical system, with a spring or with a hook, into said rod in such a way as to be removed, with hooking means, at the end of use, for being led into the WC discharge;
- a pad-carrying support, having the function of support for said rod;
- a means for supporting said rod, eventually different from said pad-carrying support.

The advantages of the tool according to the present invention are many and evident:

- an easy functioning, due to the automatic insertion of the rod to the following pads and to the automatic unhooking system;
- the absolute hygiene in use, as any manual contact with the means for the removing of the fecal residues, i.e. with the pad, is avoided.
- functionality and maintaining pf the hygiene in the water-closet, for the complete cleaning performed by the pads with respect to the conventional swabs.

The present invention will be described more in detail hereinbelow relating to the enclosed drawings in which some embodiments are shosn.

Figure 1 shows an axonometric and transparency view of a tool for the manual cleaning of water-closets with interchangeable pads.

Figure 2 shows a vertical section of the tool according to the present invention.

Figures 3 and 4 respectively show a variant with a pneumatic insertion and the unhooking terminal.

Figure 5 shows a variant with mechanical operation.

The enclosed figures show a tool for the manual cleaning of water-closets with interchangeable pads, comprising:

- a rod 1, with many possible shapes and out of different materials;
- a plurality of pads of such a height as to prevent the discharging water to wetten the rod of eventual different shapes, consisting of natural or artificial or mixed fibres, that may be inserted onto said rod 1;
- an insertion means 2 of the kind with pressure, exploiting the balancing of the diameters, together with the elasticity of the material used for the realization of the pad, as shown in

figure 3, or with depression, exploiting the adhesive force caused by the air rod with the piston 3 downwardly turned, or with a combination of the two possibilities;

- a means of the unhooking of the rod 1 from the tampon, of pneumatic kind, so that the pressure of the small piston, overcoming the adhesion due to the depression, expells the pad, or of mechanical kind, with action of said rod, or mixed;
- a pad-carrying container, having also the function of support for said rod 1, with eventual spare parts of a support for adjusting to any shape;
- a support for the rod linked to said pad-carrying container or separated from the same.

In practical realizations, the tool according to the present invention further comprises:

- an upper threaded cap 4;
- a body 5;
- a plurality of O-rings 6 for the sealing of the small piston;
- a terminal narrowing 7 for increasing the pressure in the outlet air;
- elastic springs 8, 9 in the mechanical variant;
- a ring 10 for the coat sealing.

CLAIMS

1. A tool for the manual cleaning of water-closets with interchangeable pads, characterized in:
 - a rod (1), with many possible shapes and out of different materials;
 - a plurality of pads of such a height as to prevent the discharging water to wetten the rod of eventual different shapes, consisting of natural or artificial or mixed fibres, that may be inserted onto said rod (1);
 - an insertion means (2) of the kind with pressure, exploiting the balancing of the diameters, together with the elasticity of the material used for the realization of the pad, or with depression, exploiting the adhesive force caused by the air rod with the piston (3) downwardly turned, or with a combination of the two possibilities;
 - a means of he unhooking of the rod (1) from the tampon, of pneumatic kind, so that the pressure of the small piston, overcoming the adhesion due to the depression, expells the pad, or of mechanical kind, with action of said rod, or mixed;
 - a pad-carrying container, having also the function of support for said rod (1), with

eventual spare parts of a support for adjusting to any shape;

- a support for the rod linked to said pad-carrying container or separated from the same.

2. A tool according to claim 1, characterized in an insertion system of the pads onto the rod (1) with pressure.

3. A tool according to claim 1, characterized in an insertion system of the pads onto the rod (1) with depression.

4. A tool according to claim 1, characterized in an insertion system of the pads onto rod (1) of the mechanical kind.

5. A tool according to any of the precedent claims, characterized in an insertion system of the pads onto rod (1) of the combined kind.

6. A tool according to claim 1, characterized in a system for unhooking the pads from rod (1) of the pneumatic kind.

7. A tool according to claim 1, characterized in a system for unhooking the pads from rod (1) of the mechanical kind.
8. A tool according to claims 1, 6, 7, characterized in a system for unhooking the pads from rod (1) of the combined kind.
9. A tool according to claim 1 characterized in the presence of:
 - an upper threaded cap (4);
 - a body (5);
 - a plurality of O-rings (6) for the sealing of the small piston;
 - a terminal narrowing (7) for increasing the pressure in the outlet air.
10. A tool according to claim 1, characterized in the presence of:
 - elastic springs (8, 9) in the mechanical variant;
 - a ring (10) for the coat sealing.

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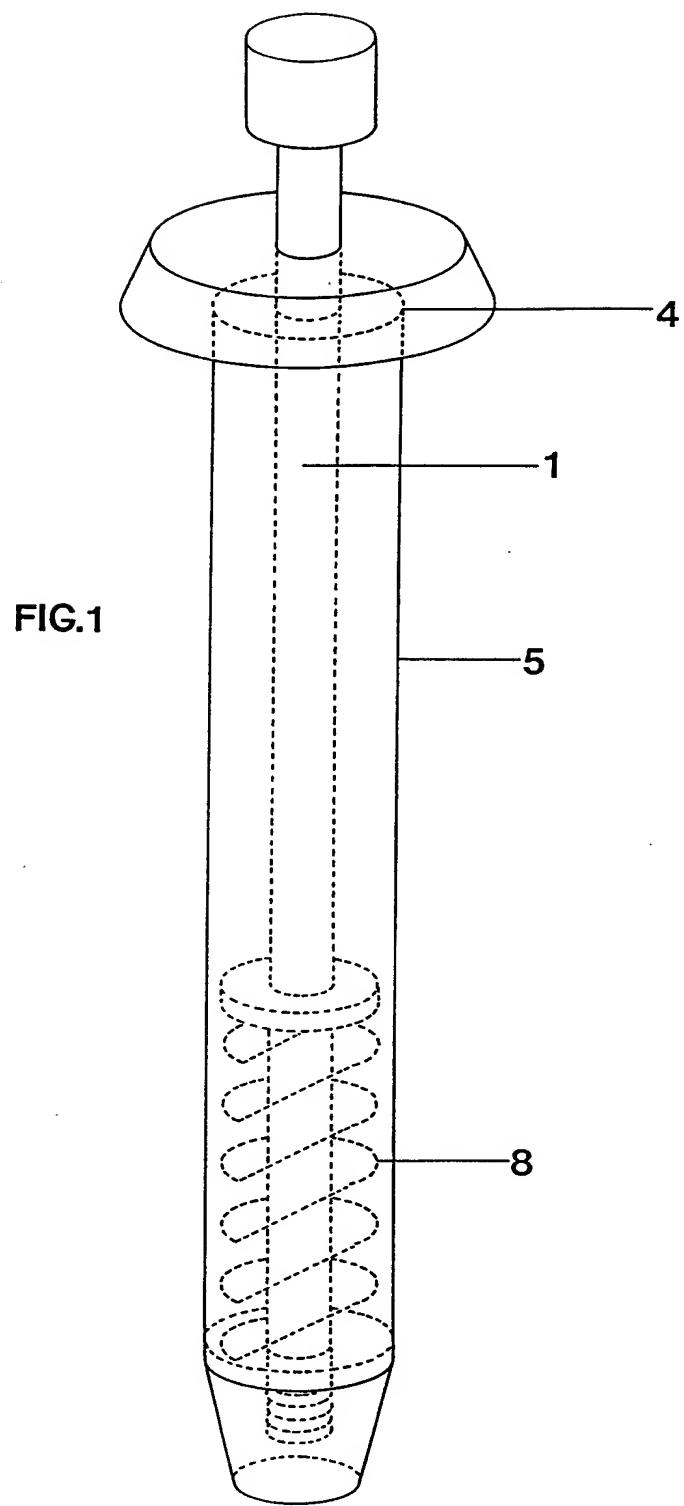
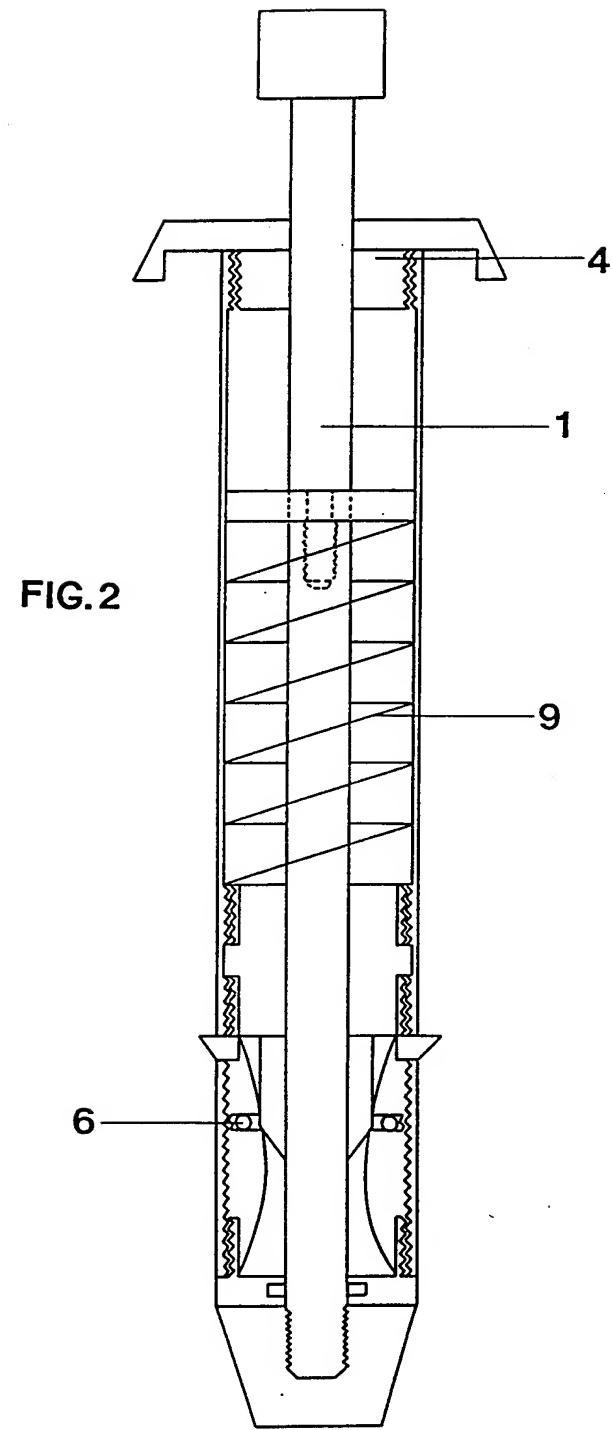


FIG.1



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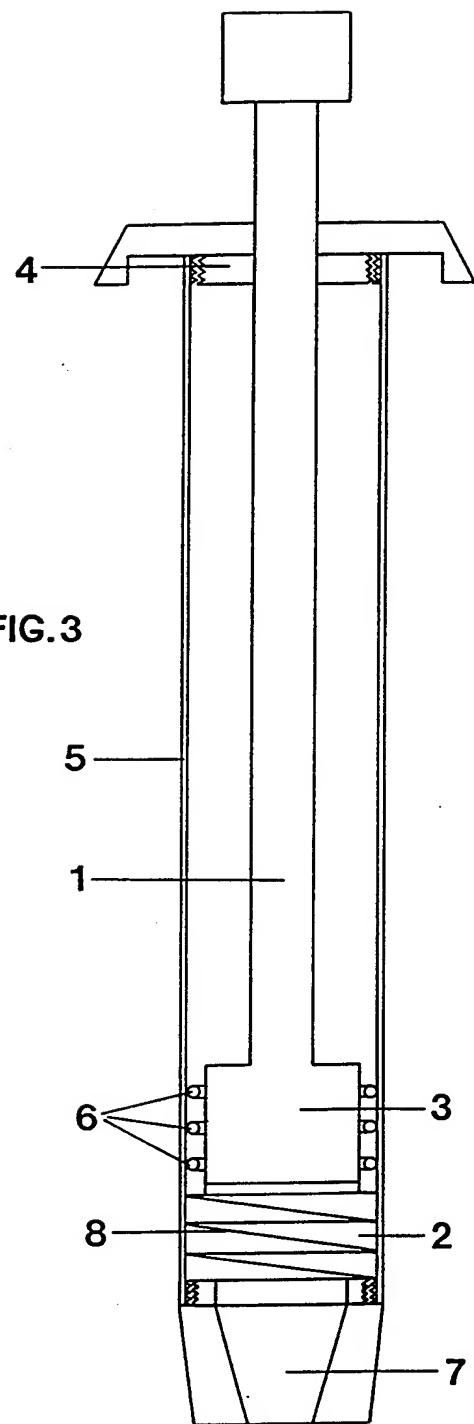
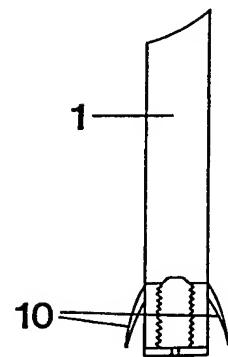


FIG. 4



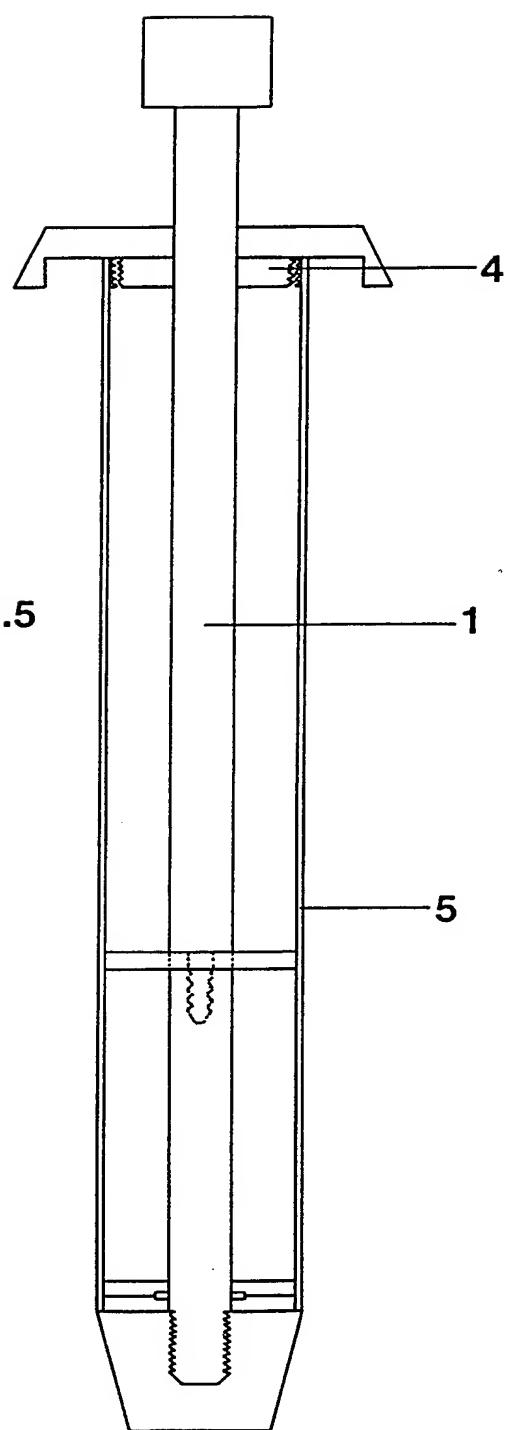


FIG.5

INTERNATIONAL SEARCH REPORT

In tional Application No
PCT/IT 96/00016

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A47K11/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A47K E03D E03C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| A | DE,U,91 07 521 (LAZAR) 12 September 1991 see the whole document --- | 1,9,10 |
| A | US,A,4 542 543 (IRWIN LAWRENCE F) 24 September 1985 see column 2, line 33 - column 3, line 32 see figures 1,2 --- | 1,9,10 |
| A | US,A,4 733 414 (WILKES KARL A) 29 March 1988 see the whole document --- | 1 |
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Patent family members are listed in annex.

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Information on patent family members

International Application No

PCT/IT 96/00016

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